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Bat Activity Survey Report

Glebe Farm

Prepared for:	Rory Jones
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SUMMARY

ITEM	DESCRIPTION
Site Address:	Glebe Farm, Aylton, HR8 2RQ
Type of structure:	Barn
Survey effort:	- Bat Dusk survey
Survey date:	- Dusk Survey – 09/05/2024
Surveyors:	- Robbie Caskey - Daniel Webb
Evidence of protected species found?	- No evidence of protected species identified.
Further survey required?	- A **Precautionary Working Method Statement (PWMS)** is required and must be adhered to during the development to mitigate any impacts.
National Planning Policy Framework (NPPF) 2023, Paragraph 186	- **No significant harm to biodiversity will occur because of the development.** - **No impacts to an SSSI will occur because of the development.** - **No irreplaceable habitats will be lost or damaged because of the development.** - **Biodiversity will be enhanced on the site (see below).**
Impacts on roost?	- No roost present
Licence from Natural England required?	No (Toolbox talk required for contractors to ensure they understand and adhere to the extent of works permissible without a licence for other EPS)
Opportunities for ecological enhancement: (See section 4.6)	- 2x External bat boxes - 1x Open-fronted bird box & 1x enclosed bird box - 1x House Martin cup

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1 INTRODUCTION

1.1 Background

Rory Jones commissioned Aware Ecology Ltd to undertake a bat survey to support planning approval for converting the barn into a residential dwelling.

The brief for this project was to undertake an updated bat dusk survey of the barn following a Preliminary Ecological Appraisal (PEA) and associated bat activity surveys completed by Wyedean Ecology in 2021. This aims to assess the likelihood of any Protected Species being affected by the proposed works so that the Local Planning Authority (LPA) can consider any potential impacts as part of their decision-making process.

1.2 Previous Survey Effort

Wyedean Ecology previously undertook a Preliminary Roost Assessment (PRA) and bat activity surveys at the site in the summer of 2021, which assessed the barn as having a high potential for a bat roost. Three dusk surveys, per BCT Bat Survey Guidelines (Collins 2023), were carried out to understand the characteristics of any active roosts and provide data for a European Protected Species Licence (EPSL) application (if required). Due to the time since the previous surveys, the LPA has requested a single updated emergence survey of the barn.

Please refer to the PEA report for full details.

1.3 Legislative / Planning Context

The legislation (outlined in Section 5), combined with the *National Planning Policy Framework (NPPF) 2023* and local councils' planning policies (including their BAP), places a further obligation on Local Planning Authorities (LPA) to consider impacts on biodiversity when assessing any development proposals. Specifically, they need to ensure that impacts on any protected species are adequately evaluated and, where necessary, addressed with suitable avoidance, mitigation, or compensatory measures to maintain the favourable conservation status of the species. So, to avoid an offence under the *Conservation of Habitats and Species Regulations 2010*. This means sufficient data is required to categorise the type and size of any roost, sett, breeding, or resting area (etc.) affected by the development proposal before seeking planning consent so that the LPA can consider this part of their decision-making process.

The ODPM circular 06/2005 provides guidance on applying the law relating to planning and nature conservation as it applies in England, complementing the NPPF.

Policy LD2 of the Herefordshire Local Plan 2011 – 2031 also outlines that development proposals should conserve, restore, and enhance the county's biodiversity and geodiversity assets.

1.4 Scope of Use

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The findings in this report are based on conditions observed during the survey, and updated advice should be sought if more than two years have elapsed. The survey and report follow the CIEEM Guidelines for Preliminary Ecological Appraisal, Second Edition, December 2017, and BS42020.

2 METHODS

2.1 Nocturnal Surveys

One dusk emergence survey was carried out on May 9, 2024, to provide an update on bat use following the previous suite of surveys in 2021.

The surveyors were positioned at a vantage point around the building to observe all potential bat access points, as marked on the site plan below. Each surveyor was equipped with a hand-held bat full spectrum recording bat detector and an infrared (IR) camera. IR cameras were added as a standard protocol to the new guidance (Bat Conservation Trust, Collins (ed), 2023) to aid in the visual detection of bat emergence and foraging behaviour. The Night Vision Aid (NVA) allows any emerging bats from 45 minutes after sunset to be detected and provides more detailed site coverage than human surveyors could provide. Using NVAs on dusk surveys also enables the transition from regular dawn surveys.

Figure 1. Position of surveyors/IR during nocturnal surveys

The dusk survey commenced approximately 15 minutes before sunset and continued until approximately 1.5 hours after sunset to maximise the likelihood of detecting both early- and late-emerging bat species. Precise timings and weather conditions are summarised in the table below.

Table 1. Nocturnal survey conditions

		Dusk Survey
Date		09/05/2024
Start Time		20:36
Sunset/Sunrise Time		20:51
End Time		22:21
Weather Conditions	Temperature (°C)	19
	Cloud Cover (1-8 Okta)	0
	Rain	Dry
	Wind (1-12 Beaufort)	1

2.1.1.1.1 Survey Equipment

The following equipment was deployed on the survey (the IR cameras were managed by appropriately trained surveyors to ensure the video recorded was suitable for use):

- Nightfox Whisker IR Camera (x2)
- Echometer Touch 2 Pro (x2)

2.1.2 Other Protected Species

Any other protected species (e.g., great crested newts, badgers, barn owls, reptiles, hazel dormice, otter, and water vole) were not surveyed directly during the dusk survey. However, incidental records would be noted.

2.2 Survey Team

Robbie Caskey, an ecologist with three years of experience in bat surveys, led the survey and assessment, while Daniel Webb, an ecologist with two years of experience, assisted with the dusk survey.

As a member of the Chartered Institute of Ecology and Environmental Management (CIEEM), he is bound by their professional standards and code of conduct; he is also appropriately experienced for the assigned tasks based on the CIEEM competency framework (CIEEM, 2013).

3 RESULTS

3.1 Nocturnal Surveys

A low abundance of bats was recorded during the nocturnal survey, with four species recorded (see Table 2 below). The major activity was common pipistrelle (*Pipistrellus pipistrellus*), which were foraging in short spells around the hedgerow and barn. The other species recorded foraging within the site was soprano pipistrelle (*Pipistrellus pygmaeus),* whilst noctule (*Nyctalus noctula*) and brown long-eared (*Plecotus auritus*) were recorded passing over the site, most of which were single passes. Therefore, due to the species recorded and the activity levels, the site is of low conservation importance but should still be managed to avoid excess light spillover into areas that bats may use foraging and commuting.

Table 2. Results of the nocturnal survey. Surveyor locations, bat activity and emergence/re-entry points are shown in figure 2 below.

Survey Date	Survey Time	Bat Activity Recorded	
Dusk			
09/05/2024	20:36 – 22:21	Emergence	No emergence was recorded during the survey.
		Foraging and Commuting	Low levels of foraging activity of common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*) were recorded around the hedgerows and barn. There was also the occasional pass by noctule (*Nyctalus noctula*) and brown long-ear (*Plecotus auritus*)).

Figure 2. Position of surveyors/IR during nocturnal surveys and bat activity directions

3.1.1.1 Evidence of Bats

Due to the numerous potential bat access points and internal roosting features, the barn still has the potential to be a day roost[1]. No evidence of bats was seen during the survey.

Bats are known to roost near the site, so they may use the features opportunistically (it must be noted that bats are transitional animals and may be inquisitive should conditions change on the property).

The site collectively provides a high-quality roosting habitat for bats, whilst the surrounding landscape offers moderate-quality foraging and commuting habitat. Bat species recorded within 2km of the site include Lesser Horseshoe (*Rhinolophus hipposideros*), Natterers (*Myotis nattereri*), Noctule (*Nyctalus noctula*), Brown Long-eared (*Plecotus auritus*), Daubentons (*Myotis daubentonii*), Brandts (*Myotis brandtii*), Whiskered (*Myotis mystacinus*) and

[1] A place where individual or small numbers of bats rest during the day but are usually absent at night.

Common Pipistrelle (*Pipistrellus pipistrellus*). Along with Common Pipistrelle, Noctule, brown Long-eared and a myotis species, Soprano Pipistrelle (Pipistrellus pygmaeus) bats were recorded around the site during the dusk survey.

Table 3. Summary of the daytime assessment and nocturnal survey results

Structure	Survey Findings	Assessed Bat Roost Potential
B1	Numerous potential bat access points and internal roosting features, including gaps between timber joints and amongst the considerable stacked and otherwise stored timber (Wyedean Ecology 2022). No bats or evidence of bats was seen during the daytime survey or activity surveys (Wild Service 2023). No emergence was seen during the updated dusk survey by Aware Ecology.	**High**
Surrounding Habitat	The site has continuous habitat connected to the wider landscape providing suitable flight paths or foraging.	**Moderate**

3.1.2 Other Species

No other protected or notable species were recorded as present on-site during the survey visit.

4 EVALUATION AND RECOMMENDATIONS

4.1 Limitations to this Evaluation

The survey was undertaken by an experienced ecologist following industry-standard good practice methodology. The nocturnal survey was carried out in May, within the peak period of the bat survey season. This gives the optimum results because bats are present in their summer roosts and forming maternity colonies. It was also carried out during optimal weather conditions.

Based on the conditions encountered during the fieldwork and the results achieved, the survey presents a robust assessment of the likelihood of use by roosting bats. It is sufficient to inform mitigation requirements for the current proposals. The overall impact on biodiversity will likely be localised and of low significance. It is doubtful that the development will have any effect outside the footprint of the works.

However, it should be noted that whilst every effort has been made to provide a comprehensive description and survey of the site, no investigation could ensure the complete characterisation and prediction of the natural environment during a 'snapshot' study.

4.2 Likelihood of Use by Protected Species

Based on the survey results following best practice, the barn still has high potential to support a bat roost; however, no bat roost has been recorded at the site following the updated dusk survey. The barn has been given a high potential due to the numerous potential bat access points and internal roosting features, including gaps between timber joints and amongst the considerable stacked and otherwise stored timber (Wyedean Ecology 2022).
It's more likely to be used by opportunistic day roosting bats rather than breeding/hibernating bats.

4.3 Predicted Impacts of the Proposed Development

The current proposal is to convert the barn. This would result in significant structural differences to the building, as any internal or external access and crevices would be removed.

The survey evidence suggests that no bat roosts would be lost. However, precautions must be taken due to the mobile nature of bats, especially crevice-dwelling species (e.g. pipistrelles), which could use the features present in the dwelling in the future. There is also a chance that nesting birds may be affected. An experienced ecologist would check this before work commences should it occur within the nesting period (March to August inclusive). The erection of bird boxes nearby could also limit birds' chances of nesting within the impacted areas.

The works would not impact the designated sites within 10km of the site due to its minimal footprint and the work not removing any linear features. Still, installing new external lighting on possible bat flight lines around the site could have indirect effects, which are discussed further in the following mitigation section.

4.4 Further Surveys and EPS Licensing

4.4.1 Bats

Due to the PEA survey findings and the time that has passed since the previous activity survey, the property required **one** updated bat activity survey in the current survey season (May – September 2024) to ensure that the conditions and use of the barn haven't changed. This survey was undertaken on 09/05/2024; no further surveys were recommended following this survey.

The work should be completed following a **Precautionary Working Method Statement (PWMS)** outlining safe working methods to protect protected species. This would include:

• A bat box should be fitted to an appropriate location before work commences. This will provide provisional roosting space for any bats encountered during the works (if a bat is discovered at unsupervised times, work will stop immediately, and the licensed ecologist will be called for advice. This advice may include leaving the bat to disperse on its own accord or waiting for a licensed handler to move it before works proceed).

• These boxes will be installed at c. 5 metres above the ground facing south-westerly or south-easterly directions to receive full sunlight for at least part of the day, have open flight access and be protected from night-time illumination. The above-given bat box usually lasts c. 25 years and must be left in situ after completion of the development.

• It is advisable that work be undertaken within spring or autumn to avoid the full maternity or hibernation season per Mitchell-Jones (2004) Bat Mitigation Guidelines.

All contractors working on the proposed development must be briefed by the ecologist named in the PWMS (**Aware Ecology contact mobile: 07470433712**) on the legal protection afforded to protected species and their places of shelter and on how to proceed if anything is discovered during the work (*if any protected species is found at unsupervised times, work will stop immediately, and the licensed ecologist will be called for advice*).

4.5 Mitigation / Avoidance Measures

4.5.1 Protected Species

4.5.1.1 Bats

As no confirmed roost exists and the barn has limited potential for hibernation use, works may commence without a seasonal restriction as outlined in the Bat Mitigation Guidelines (2004). However, it is recommended that work be undertaken within spring or autumn to avoid the full maternity or hibernation season and to minimise additional risk to individuals when they are more susceptible to disturbance.

There is a likelihood that bats roosting in the broader landscape will forage and/or commute over and around the site. The surrounding hedgerows/trees should be maintained/enhanced to ensure flyways are available for the bats, and a lighting plan should be implemented that reflects the guidance of the Bat Conservation Trust Bats and Lighting in the UK (2018). This includes ensuring the dwelling is not directly lit, particularly at the eaves/roof level. If new lighting is required, it would be good practice to use low-level lamps, hooded/cowled, to avoid unnecessary light spillage and with motion sensors or timers to limit illumination to essential periods only, especially as Brown long-eared and horseshoe bats are susceptible to impacts from artificial lighting. Suppose artificial lighting is not inappropriately used during or after development. The proposals would be considered small-scale and would not impact habitats (or dark sky sites) beyond the site boundaries.

Breathable roofing membrane must not be used in any part of the roof accessible to roosting bats due to the significant risk of bat entanglement in the material's fibres and associated mortality from entrapment.

Bats will likely be flying around the buildings at night during the late spring, summer, and early autumn months, and they could investigate any new crevices or cavities that are exposed on the walls/roof during the building works. Any such holes or gaps must be securely covered/blocked at the end of each day's work to prevent bats from having the opportunity to use them for shelter.

In the unlikely event that a bat is encountered, work in that area must cease immediately, and advice must be sought from a licenced bat ecologist before resuming.

4.5.1.2 Birds

Any work impacting nesting birds should be completed outside the breeding bird season (March to August inclusive) or after a pre-works survey/search by a suitably experienced ecologist. However, as the broader landscape contains a high-quality nesting habitat, any negative impacts on nesting birds are unlikely to extend beyond the site. The presence of nesting birds on site is considered unlikely.

If any active nests are found, these will be protected, along with an appropriate buffer zone of 10m, until the nesting is complete and the young have fledged.

4.5.2 Toolbox Talk for Contractors

As bats are likely to be present in the surrounding landscape, it would be good practice to have a toolbox talk for all contractors with a licensed bat ecologist before they start work to make them aware of the need to avoid possible

harm to the bats. This would also help to ensure that they know what to do in the unlikely event that a bat is encountered during the work, should a licensed bat ecologist not be present.

Additional toolbox talks should also be given to contractors to inform them of the other protected species/nesting birds on site. This will ensure they know what signs to look for during work and what process to follow should any species be encountered.

4.5.3 Precautionary Measures

The proposed groundwork areas must be confined to areas that will not impact the root systems of the existing and retained trees within the grassland and boundary hedgerows. An appropriate buffer (as detailed in BS5837:2012) must be established and maintained throughout the works.

Construction work should be limited to daylight hours. Prohibiting night-time work will protect the site from the potential adverse effects of noise, activity, and lighting.

4.6 Ecological Enhancement

The enhancements in this report aim to meet the requirements set out in *Policy LD2 of the Herefordshire Local Plan 2011 – 2031 to* enhance existing biodiversity and create new biodiversity features on site.

4.6.1 Species Enhancement

The site will be enhanced for nesting birds and roosting bats by erecting two artificial bird boxes, one house martin box, and two bat boxes on suitable features at the site's perimeter or on the buildings themselves. Various durable bat and bird boxes will also be installed, including maintenance-free boxes suitable for trees or buildings (see Appendices 7.3 and 7.4).

The bat boxes will be placed on the south-east to south-west aspects ideally, with linear features nearby, to allow bats undisrupted dispersal to local foraging habitat and in positions where the entrance is not artificially illuminated at night (enabled by the provision of the 'dark corridor'). Boxes will be positioned a minimum of 3m from the ground.

The bird boxes will also be in secluded positions, ideally close to cover and at a minimum height of 3 metres from ground level. Other boxes, such as house sparrow and house martin-specific boxes, should be placed following their guidelines, ideally around the eaves of the new dwelling. An artificial swallow cup could also be erected high up and inside a building, such as a garage or outbuilding, which allows constant easy access.

Depending on the final building design, other bat compensations could consist of ridge tiles, integrated/external bat boxes, and bat bricks suitable for crevice-dwelling species. If bats can access the internal elements of the roof, only traditional Type 1F felt must be used to line the roof.

It is also recommended that insect bricks (or similar) be incorporated into the design or placed within the site, along with hedgehog highways along any closed-boarded fencing sections.

Table 4. Compensation enhancement measures

Species	Enhancement Type
Bats	- 2x Integrated/external bat boxes[1] (one crevice & one hollow)
Birds	- 1x Open fronted & 1x enclosed boxes - 1x House martin (& Swift/Swallow boxes)[2]
Other Species	- Wildlife friendly planting (i.e. wildflowers good for nighttime flying insects)
Lighting	- Keep it to essential lighting only that is directional rather than floodlights - Use motion sensors/timers and hoods to limit unnecessary illumination

[1] To be placed following guidance from Bat Conservation Trust Bat Box Information Pack (2018) e.g. at least 4m high facing south, southeast or southwest. Summer maternity roosts in the northern hemisphere often have a southerly or westerly aspect for maximum solar heating. Male roosts and hibernation sites typically have a northerly aspect (BCT 2020)

[2] House Martin cups should be placed at the gable apex or under the eaves/soffit with a deep overhang; this should be facing north, east or west at a minimum height of 2m. Integral swift nest boxes to follow BS 42021:2022. Swallow nest cups should be placed high up and inside a building, such as a garage or outbuilding, allowing constant access.

5 Legislation

5.1.1 Bats

All species of British bat are protected by The '*Wildlife and Countryside Act 1981'* (as amended), extended by the '*Countryside and Rights of Way Act 2000' (CRoW Act)*. This legislation makes it an offence to:

- intentionally kill, injure or take a bat;
- possess or control a bat;

- intentionally or recklessly damage, destroy or obstruct access to a bat roost; and
- intentionally or recklessly disturb a bat whilst it occupies a bat roost.

Bats are also European Protected Species listed on *Schedule 2* of the '*Conservation of Habitats and Species Regulations 2017*' under *Regulation 41*. This legislation makes it an offence to:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats in such a way as to be likely to (a) impair their ability to: (i) survive, to breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or b), to affect significantly the local distribution or abundance of the species to which they belong; and
- damage or destroy a breeding site or resting place of a bat; and
- possess, control, transport, sell, exchange a bat, or offer a bat for sale or exchange.

All bat roosting sites receive legal protection even when bats are not present.

Where it is necessary to carry out an action that could result in an offence under the '*Conservation of Habitats and Species Regulations 2017*' it is possible to apply for a European Protected Species (EPS) licence from Natural England (NE). Three tests must be satisfied before this licence (to permit otherwise prohibited acts) can be issued:

- *Regulation 53(2)(e)* states that licences may be granted to "preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment."
- *Regulation 53(9)(a)* states that a licence may not be granted unless "there is no satisfactory alternative".
- *Regulation 53(9) (b)* states that a licence cannot be issued unless the action proposed "will not be detrimental to the maintenance of the population of the species concerned at a favorable conservation status in their natural range".

5.1.2 Birds

All bird species are protected under Section J of the Wildlife and Countryside Act 1981 (as amended), which was extended by the CRoW Act.

The legislation makes it an offence to intentionally:

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
- take or destroy an egg of any wild bird.

Certain species of bird are listed on *Schedule 1* of the '*Wildlife and Countryside Act 1981*' (as amended) and receive protection under *Sections 1(4)* and *1(5)* of the Act. The protection was extended by the '*CRoW Act*'. The legislation confers special penalties where the above-mentioned offences are committed for any such bird and makes it an offence to intentionally or recklessly:

- disturb any such bird, whilst building its nest or it is in or near a nest containing dependent young; or
- disturb the dependent young of such a bird.

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Biodiversity Metric 3.0 User Guide (Panks et al, 2021) and Technical Supplement (Panks et al, 2021) (including the Condition Assessment Sheets for each habitat type).
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7 APPENDIX

7.1 Site Photos

Picture 1. Photo of the barn

7.2 Recommended Bat Boxes

The provision of bat boxes is recommended to enhance the site's biodiversity and replace any lost roosts during construction.

- *Ecostyrocrete Crevice and Hollow Bat Boxes* (this would be the preferred option). These should be installed where they are sheltered from the wind but unshaded for most of the day at a mix of heights from 3m-5m. Summer maternity roosts should be on a south-easterly to south-westerly aspect. There should be a clear flight line into the box, so ensure nothing is impeding the entrance to the box. Different bat species prefer different boxes, so a mix would provide more chances for use.
- *Schwegler Bat Boxes.* These should be installed as above.
- *Bat Block.* These should be positioned within the wall during construction. Aim to position South or West facing for a summer maternity roost or north-facing for a winter hibernation roost.
- *Kent Bat Box.* Boxes are best fixed as high as possible in sheltered/shaded locations with a clear flight to the box entrance. Exposure to the sun for part of the day is acceptable. Several boxes may be placed together.
- *Soffit Bat Box.* Boxes are placed within the soffit, and access is created via a 20mm slot in the back of the soffit board against the external wall.

HALF AND HALF BAT BOX

£50

Individually Handmade - Specifications are in cm and approximate.
External: 44 high x 22 wide x 10 deep
Internal: Vertically, one half of the box is a Two Crevice design, the other half of the box has the Small Hollow design.
Weight approx. 8kg
For where the bat species is unknown or to be suitable for a wider range of species

MEDIUM HOLLOW BAT BOX

£66

Individually Handmade - Specifications are in cm and approximate.
External: 44 high x 22 wide x 13 deep
Internal: 41 x 17 x 7.5
Weight approx. 9kg
Designed for larger groups of bats who prefer a wider cavity - described as **Hollow**, such as Brown Long Eared, Noctules, Myotis Sp.

TWO CREVICE BAT BOX

£53

Individually Handmade - Specifications are in cm and approximate.
External: 44 high x 22 wide x 10 deep
Internal: 41 x 17 x 1.8 crevices @ 2
Weight approx. 8kg
Designed for small groups of crevice dwelling bat species, such as Common and Soprano Pipistrelles.

https://www.greenwoodsecohabitats.co.uk/shop

7.3 Recommended Bird Boxes

The provision of bird boxes is a recommendation as they enhance biodiversity on the site and replace any lost nests during the construction phase. Ideally, these should be either swift boxes, house martin nests or sparrow terrace nest boxes due to the declining populations of these species, but other nest boxes can be used, as discussed below.

- *Schwegler and Manthorpe Swift bricks* (this would be the preferred option). These should be installed in sheltered locations (such as under the eaves of a suitable building), installed at a minimum height of 2m and orientated in a southerly/ westerly direction.
- *WoodStone Swift Nest Boxes* should be installed in sheltered locations (such as under the eaves of a suitable building), at a minimum height of 2m, and orientated southerly/ westerly.
- *Schwegler Single & Double House Martin Nests.* These should be installed in sheltered locations (such as under the eaves of a suitable building), installed at a minimum height of 2m and orientated in a southerly/ westerly direction (ensuring they have enough shade).
- *Schwegler 1SP Sparrow Terrace nest boxes.* These should be installed in a sheltered location upon a suitable building, at a height no less than 2m and orientated in a southerly or westerly direction.
- *Schwegler Woodcrete 1B nest boxes (for trees) and/ or Schwegler Bird House nest boxes (for buildings)* should be installed upon a suitably mature tree and/ or upon a suitable building at a height of no less than 2m and orientated in a southerly or westerly direction.
- *Wooden Barn Owl box.* These can be installed on trees or buildings more than 1km from motorways. They should be 3m above ground level with minimal obstructions leading to the opening. Trees should be mature with thick trunks and located within a hedgerow or woodland edge.
- *Little Owl box.* The Little Owl nestbox should be erected horizontally at least 3 metres (10 feet) above the ground on a wall top, beam or tree branch so that Little Owl owlets can walk in and out before fledging. Little Owls prefer nest boxes in open-sided or open-fronted buildings rather than enclosed places. A thin layer of untreated wood shavings or bark can be provided as a floor covering.

Apex Bird Box
£22.00 excl. VAT
£26.40 inc. VAT

Apex Robin Box
£22.00 excl. VAT
£26.40 inc. VAT

Eco House Martin Nest
£20.30 excl. VAT
£24.36 inc. VAT

Swift Nest Box
£36.60 excl. VAT
£43.92 inc. VAT

https://www.nestbox.co.uk/collections/bird-boxes

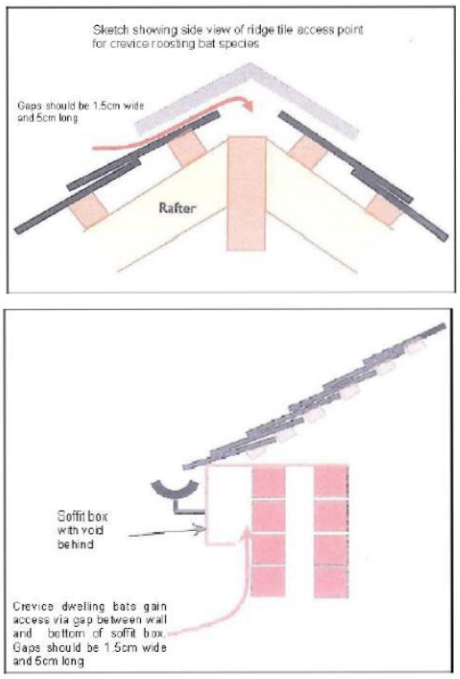
7.4 Other Biodiversity Enhancements

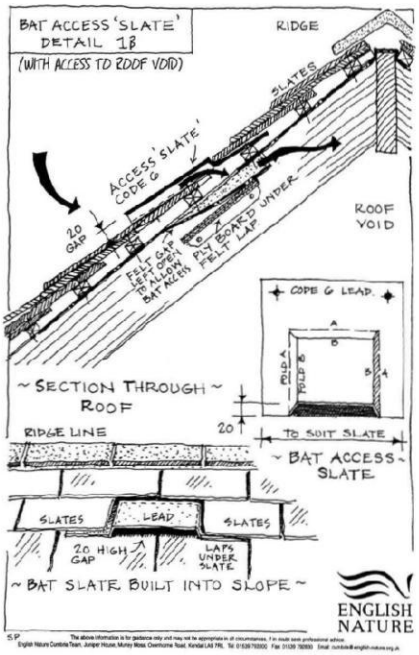
- *Hedgehog Highways*. Minimum 150mm x 150mm gaps to be left in fencing/ boundaries between adjoining plots where suitable habitat exists or is created.
- *Insect boxes/Bee Banks/Bee Bricks*. Suitable for a wide range of invertebrates. It can be prefabricated/off-the-shelf units or constructed using available materials. Bee banks can be built from a

layer of turf, soils and sands to create low mounds / vertical faces with a sunny aspect—ideally 1 per property.

- *Habitat Pile*. Create a log pile by loosely arranging together old branches or pieces of log, leaving the bark on and using a variety of species if possible. Place the pile in a shady place, such as under a tree, at the foot of a hedge, at the back of the border or behind the shed.

7.5 Bat Access Point Designs





7.6 Bat Mitigation – Fascia, Soffit and Bargeboard Roosts

The below information is from Acer Ecology (2015) and is accessible at https://www.acerecology.co.uk/mitigation-crevice-dwelling-bats/

Fascia, Soffit and Bargeboard Roosts

Crevice dwelling bat species often exploit gaps in or under fascias, soffits and bargeboards, to gain entry into buildings. If these features are being removed, replaced or made inaccessible to bats during the development work and bats are known to be using these features, then compensation within the new fascia, soffit or bargeboard should be implemented. This can be as simple as cutting holes in the new soffit box or bargeboard. The holes must be located next to the wall of the building as bats often require a surface (often a wall) to land on before crawling through the access. Examples of this are shown below:

Alternatively, gaps can be left between the wall and the fascia, soffit or bargeboard, by raising parts of the feature off the wall by approximately 20mm.

7.7 Recommended Native Planting

7.7.1 Native Hedgerow/Shrub Composition

Hedgerow
Field maple *Acer campeste*
Hazel *Corylus avellana*
Hawthorn *Crataegus monogyna*
Elder *Sambucus nigra*
Holly *Ilex aquifolium*
Blackthorn *Prunus spinosa*
Dog rose *Rosa canina*
Spindle *Euonymus europaeus*
Dogwood *Cornus sanguinea*
Shrubs (https://www.wildlifetrusts.org/actions/how-make-shrub-garden-wildlife)
Barberry *Berberis spp.*
Bell Heather *Erica cinerea*
Box *Buxus sempervirens*
Cotoneaster spp.
Currant *Ribes spp.*
Elder *Sambucus nigra*
English Lavender *Lavandula angustifolia*
Firethorn *Pyracantha spp.*
Forsythia spp.
Guelder Rose *Viburnum opulus*
Hazel *Corylus avellana*
Heather (Ling) *Calluna vulgaris*
Hebe spp.
Holly *Ilex aquifolium*
Honeysuckle *Lonicera periclymenum*
Ivy *Hedera helix*
Privet *Ligustrum vulgare*
Skimmia *Skimmia japonica*
St John's Wort *Hypericum spp.*
Sweet box *Sarcococca confusa*
Witch hazel *Hamamelis spp.*

7.8 Mitigation/Avoidance Measures – Other Species

7.8.1 Great Crested Newts

During the construction phase, it is unlikely that any GCN will be discovered due to the works' limited footprint, which only extends into low-potential terrestrial habitats. However, any building materials will be stored clear of the ground (on pallets or similar) to avoid crushing any animals that might seek refuge under them when the materials are lifted.

Care will be taken if potential refuges are encountered and need to be moved. This will be done by hand and under the supervision of the consultant or agent. It will not be done during hibernation (November – March inclusive).

Excavations for footings will be done between mid-November and February and filled before the end of February. If any trenches are not filled by the end of February, then earth ramps will be made in each trench, in consultation with the consultant, so that newts can escape. Trenches will then be inspected before filling.

If a great crested newt is discovered around the work site, work will stop in that area, and a licensed great crested newt worker will be contacted immediately for advice.

7.8.2 Reptiles

The presence of reptiles within the proposed works areas is considered unlikely, but safe working methods should be implemented to discourage them from occurring on-site. These methods should include maintaining the grassland at a low level (approx. 300mm during the winter) to decrease the suitability of reptile habitats on site.

Removing the possible refugia around the site should be completed outside of reptile hibernation (October - March) to avoid disturbing hibernating individuals. It must also be subject to a fingertip search by a suitably qualified ecologist.

During construction, any storage of piles of materials and excavated earth on the site should be kept to a minimum and away from the boundaries to deter reptiles from using them for temporary cover. Suppose a reptile is found during work when an ecologist is absent. In that case, an ecologist should be contacted, and an appropriate course of action should be agreed upon before work continues.

7.8.3 Badgers

No direct impact on badgers is predicted during the works. To ensure any foraging Badgers do not become trapped within any excavation works, the excavations should either not be left uncovered overnight or ways of escape for Badgers should be provided (wooden planks over 60cm wide at no greater angle than 30° or graded earth banks). This methodology is also beneficial to hedgehogs. Before construction, any exposed pipes and trenches must be checked for trapped wildlife each morning.